ACC.14
TCT@ACC-i2 | innovation in intervention

A1119
JACC April 1, 2014
Volume 63, Issue 12

Non Invasive Imaging

SCREENING IMPLANTABLE CARDIOVERTER DEFIBRILLATOR ELIGIBLE HEART FAILURE PATIENTS WITH I-123 METAIODOBENZYLGUANIDINE IMAGING VERSUS NO SCREENING: AN ECONOMIC MODEL COMPARING COSTS AND OUTCOMES

Poster Contributions
Hall C
Sunday, March 30, 2014, 9:45 a.m.-10:30 a.m.

Session Title: SPECT Imaging: Focus on Vasodilators, Interpretation and Newer Applications
Abstract Category: 16. Non Invasive Imaging: Nuclear
Presentation Number: 1173-26

Authors: *Ken O'Day, Wayne Levy, Meridith Johnson, Arnold Jacobson, GE Healthcare, Princeton, NJ, USA*

Background: ADMIRE-HF/HFX prospectively validated I-123 Metaiodobenzylguanidine (mIBG) imaging in predicting prognosis of all-cause and cardiac mortality in NYHA II and III HF patients with LVEF≤ 35%. To assess the cost-effectiveness of mIBG for screening patients referred for an ICD, we developed a decision-analytic model to compare screening with mIBG to no screening.

Methods: In the model, screened ICD-eligible patients with a heart/mediastinum (H/M) ratio ≥1.6 on mIBG imaging (low-risk for SCD) did not receive ICDs. Data on the effectiveness of mIBG for risk stratification were obtained from ADMIRE-HF/HFX. Data on ICD effectiveness for prevention of SCD were obtained from a meta-analysis. Costs of ICDs, generator and lead procedures were obtained from AHRQ National Inpatient Sample and costs were inflated to 2013 US dollars. Age-specific mortality was modeled using US life tables and data from the ACT Registry on risks of SCD and non-SCD mortality. Model outcomes were validated against ACT Registry HF mortality data and sensitivity analyses were conducted.

Results: Screening with mIBG imaging reduced ICD utilization by 21%, resulting in a number-needed-to-screen to prevent 1 ICD of 5. Screening reduced costs by $5,459 per patient over 2 years compared to no screening and resulted in a negligible reduction of 0.003 life years (1 day). In subgroup analyses, cost savings were greater for patients with EF 25-35% ($6,791) than for EF <25% ($1,916), with a similar 0.003 and 0.002 reduction in life years, respectively. This trend was consistent over a 5-year period. Model results were robust across all tested parameter values and were most sensitive to the proportion of patients with H/M <1.6, frequency of ICD generator replacement, and ICD cost.

Conclusions: ADMIRE-HF/HFX was not designed to assess the use of mIBG imaging in screening patients selected for ICD implantation, but did show its value in identifying patients with a low-risk of mortality. Incorporating mIBG imaging into the assessment of patients selected for ICDs may reduce costs associated with implantation of ICDs in low-risk patients.